TE PU (ROY RD) WETLANDS FIELD TRIP

Paul Cashmore

On Sunday 7th May 2006 15 people ventured into the Te Pu (Roy Rd) wetland/mire complex on a beautiful crisp autumn day. The main aim was to botanise our way through the three wetlands which occur in this area, which actually run south-west from Roy Rd into the Mangorewa-Kaharoa Block and include the wetlands known as the 'Mamaku Lagoons' visited on the November 2005 field trip. This wetland complex is very old. All three wetlands occur in Mangorewa Forest Conservation Area administered by the Department of Conservation. I had recently visited these wetlands in the previous March during a threatened plant survey with Peter de Lange and John Hobbs in which a species list had been compiled for the three sites. This list provided a basis for this trip.

Te Pu 1 NZMS 260 U15 889 523

After some shuffling of vehicles to the road end and confirmation with 2 duckshooters that they had finished for the day the party headed across the paddock and into the eastern wetland on the edge of the Mangorewa Forest Conservation Area. This area consists of a large open water lagoon with abundant stands of tall spike sedge (*Eleocharis sphacelata*) dominating throughout. Water levels were high and flooding through the kahikatea (*Dacrycarpus dacrydioides*) forest which surrounds the western side of the wetland. The party slowly botanised the north-western margin but stayed mainly in the forest and kahikatea edges avoiding the lagoon proper due to the high water levels and the risk of wet feet. The party soon located the two green mistletoe (*Ileostylus micranthus*) plants which were found on the March visit. They are hosted by swamp coprosma (*Coprosma tenuicaulis*) under the kahikatea stand and were large and appeared healthy suggesting possums may be reluctant to venture out this far into the lagoon. Also noted on the swamp coprosma in this area were specimens of *Drymoanthus adversus*. A fairly substantial area of raukawa (*Raukawa edgerleyi*) was also found in the vicinity. They were epiphytic but included some sizeable trees as well as saplings, all looking very healthy.

This species appears to be locally common on the Mamaku Plateau as I have noticed it in numerous places on the plateau and noted its abundance on the November field trip to Mamaku lagoons. The party continued to the southern corner of the wetland where we admired its kahikatea forest margin and made the most of a very good photo opportunity. This provided the group with a chance to botanise a few wetland plants, in particular various common *Juncus* species and a chance to see a few of the sedges noted on the list – namely *Carex virgata* and the two exotic species, *Carex ovalis* and *C. demissa* which were abundant in the vicinity. The party then moved into the forest and followed an old logging road which had become overgrown mainly by bracken (*Pteridium esculentum*), and proceeded along the forest edge over the low hill until the second wetland came into view.

Te Pu 2 NZMS 260 U15 885 522

Te Pu 2, which is the central wetland in the Roy Rd complex, comprises an extensive area of *Baumea rubiginosa-B. teretifolia/Sphagnum cristatum* sedgeland, and monoao-swamp coprosma-manuka shrubland surrounded by pole kahikatea/swamp coprosma scrub and forest, and kahikatea-rimu-pokaka forest. Further back the surrounding forest which has been logged in places consisted of (rimu)-tawa forest. This is a more extensive U-shaped wetland but quite different to the other two wetlands in that there is no open water present. The party ventured into the wetland only to find a reasonable amount of standing water present making travel through the *Baumea* sedgeland and *Sphagnum* more difficult. It was therefore decided to retreat to the margins and find a dry spot for lunch.

After lunch we continued along the south-eastern margin of the wetland staying largely within the kahikatea margin but with various members venturing out into the wetland proper in places to sample the vegetation. Graeme Jane noticed that *Gleichenia microphylla* was abundant on the margins but wasn't recorded on the species list. This provided an excellent opportunity for an impromptu class on the differences between the two *Gleichenia* species. This area also provided a lesson for those members unfamiliar with

the different life stages of pokaka (*Elaeocarpus hookerianus*) as there were abundant adult and juvenile specimens around the margins of the wetland. Sapling and pole rimu (*Dacrydium cupressinum*) was also abundant in the cutover forest behind the kahikatea stands. At one point two rimu trees of similar age were noted standing together. This led to a debate on which was male and which was the female tree. After some debate and searching for fruit and examination of foliage the more learned members were able to show the group how to distinguish the sexes.

Further along the margin towards the south-western corner of the wetland we came across several tomos. The first was a squarish hole at the base of a huge rimu. Upon closer examination it revealed a large cavity several metres in diameter. We also came across the outlet to the wetland which consisted of a small channel with water rushing through it and disappearing underground through a narrow slit in the ignimbrite. Later several other huge clefts in the ignimbrite leading to narrow tomos with the sound of rushing water far below were noted. At one of these tomos a royal fern (*Osmunda regalis*) plant was noted growing. The two DOC staff present attacked it with vengeance, uprooting it and disposing of in the tomo to ensure it wouldn't see the light of day again.

The western edge of the wetland contained a series of clearings probably reflecting past logging activity. Of note in this area were some of the most abundant and largest ramarama (*Lophomyrtus bullata*) that I have seen.

Many *Gahnia* plants were noted in and around the wetland margins. While *Gahnia rigida* was noted in abundance on the field trip to Mamaku Lagoons (Cashmore 2005) we failed to locate any in these wetlands. Despite further searching all plants were *Gahnia xanthocarpa.* Also eluding us was *Cortaderia toetoe*, which was recorded during our March visit to this site. Chris Ecroyd was keen to relocate this species to get a herbarium voucher noting that there were no recorded sites for this species on the Mamaku Plateau (Ecroyd *pers. comm.*). Not realising the significance John and I had not taken

much notice when it was recorded during our previous visit and could not find the location.

The party regrouped and headed back into wetland along the northern fringe of the eastern arm. The travel was slightly easier and it was a good chance to appreciate the wetland proper. We walked through an area with a small cluster of royal fern which had been earmarked by DOC for follow-up spraying in the summer. Also present were occasional grey willow (*Salix cinerea*) seedlings poking up through the *Baumea* and *Sphagnum*, another potential weed threat to this otherwise pristine wetland, which DOC plans to control

The last 100 metres of wetland nearing the farm boundary proved to be the downfall of many members. Whilst most had maintained dry gumboots throughout the entire trip the last section was deeper and half the party got wet feet scrambling for the safety of higher ground back in the forest. This last section has denser *Baumea* with manuka (*Leptospermum scoparium*) above and it became necessary to follow the deer tracks through the *Baumea* in order to find our way out. The farm boundary was soon reached with a well-earned snack and rest break. The DOC staff went to check on a nearby patch of ivy (*Hedera helix*) which had taken a liking to a large kahikatea on the fenceline and had been poisoned accordingly.

The time was now 4pm and the options were given to return to the cars via the forest or the paddocks. The vote was the paddocks which was the quickest way. Unfortunately with the short winter day we ran out of time to visit the third wetland but this one is more highly modified and degraded with extensive grey willow invasion. Also being opening weekend for duckshooting this wetland had been busy with duckshooters in the morning. So we decided to head for home, everyone having had an enjoyable and educational trip to two seldom visited or seen wetland gems in the Rotorua District.

VASCULAR FLORA OF THE TE PU (ROY RD)WETLANDS, NORTHERN MAMAKU PLATEAU

Peter J. de Lange, John Hobbs, Paul Cashmore and Pauline Adams
17 March 2006 (+John Hobbs 7 May 2006)

Te Pu 1 NZMS 260 U15 889 523 (187 taxa)
Te Pu 2 NZMS 260 U15 885 522 (130 taxa)
Te Pu 3 NZMS 260 U15 875 516 (152 taxa)

Abbreviations

(unc) – uncommon within survey area I: = indigenous (189 taxa) A: = Adventive (59 taxa)
* = Adventive p = planted (6 taxa) p/i = planted specimens and indigenous plants in same site (6 taxa)
† = attempted eradication (2 taxa)

CLUBMOSSES (1) (I:3 A:0)

	Te Pu 1	Te Pu 2	Te Pu 3
Huperzia varia (unc)	√	√	√
Lycopodium deuterodensum		√	
L. volubile		√	

FERNS AND FORK FERNS (43) (I:45 A:1)

	Te Pu 1	Te Pu 2	Te Pu 3
Asplenium bulbiferum	√		
A. flaccidum	√	√	√
A. oblongifolium	√	√	√
A. polyodon	√	√	
Azolla filiculoides	√		
Blechnum fluviatile	√	√	√
B. discolor	√		√
B. minus	√	√	√
B. novae-zelandiae	√	√	√
B. penna-marina		√	
Ctenopteris heterophylla	√	√	
Cyathea dealbata	√		
C. medullaris	√	√	
C. smithii	√	√	
Dicksonia fibrosa	√	√	√

D. squarrosa	√	√	√
Diplazium australe	√		√
Gleichenia dicarpa		√	√
Gleichenia microphylla		√	
Grammitis billardierei (unc)			√
Histiopteris incisa	√	√	√
H. demissum	√		√
Hymenophyllum dilatatum (unc)	√		
H. ferrugineum (unc)	√		
H. flabellatum	√		√
H. multifidum (unc)	√	√	
H. rarum	√		√
H. revolutum (unc)			√
H. sanguinolentum	√	√	√
H. scabrum	√		
Hypolepis ambigua	√		√
H. distans (unc)	√		√
H. rufobarbata (unc)	√		
H. ambigua x *H. rufobarbata* (unc)	√		
Lastreopsis hispida	√		
Leptopteris hymenophylloides	√		
Lindsaea trichomanoides (unc)			√
Microsorum pustulatum subsp. *pustulatum*	√	√	√
M. scandens	√		
**Osmunda regalis* (unc)			
Paesia scaberula	√	√	√
Pteridium esculentum	√	√	√
Pyrrosia eleagnifolia	√	√	√
Rumohra adiantiformis (unc)	√		√
Tmesipteris elongata	√		
Trichomanes reniforme (unc)			√
T. venosum	√		

GYMNOSPERMS (7) (I:7 A:0)

	Te Pu 1	**Te Pu 2**	**Te Pu 3**
Dacrycarpus dacrydioides	√	√	√
Dacrydium cupressinum	√	√	√
Phyllocladus trichomanoides (unc)		√	√
Podocarpus cunninghamii	√		√
P. totara var. *totara* (unc)	√ p/i		
Prumnopitys ferrugineus (unc)	√		√
Prumnopitys taxifolia (unc)	√		

MONOCOT TREES & SHRUBS (2) (I:2 A:0)

	Te Pu 1	Te Pu 2	Te Pu 3
Cordyline australis	√ p/i	√	√
C. banksii (unc)	√		

MONOCOT VINES (1) (I:1 A:0)

	Te Pu 1	Te Pu 2	Te Pu 3
Ripogonum scandens	√	√	√

DICOT TREES & SHRUBS (51) (I:47 A:5)

	Te Pu 1	Te Pu 2	Te Pu 3
Alectryon excelsus subsp. *excelsus* (unc)	√		
Alseuosmia macrophylla	√		√
Aristotelia serrata	√		√
Beilschmiedia tawa	√	√	√
**Berberis glaucocarpa*	√		√
Carpodetus serratus	√	√	√
Coprosma grandifolia	√	√	√
C. lucida	√		√
C. robusta	√		√
C. tenuicaulis	√	√	√
Dodonaea viscosa	√ p†		
Dracophyllum subulatum		√	
Elaeocarpus dentatus	√		√
E. hookerianus		√	√
**Erica lusitanica*		√	√
Fuchsia excorticata (unc)	√		
Geniostoma ligustrifolium			√
Griselinia littoralis (unc)			√
G. lucida (unc)		√	
Hebe stricta var. *stricta* (unc)		√	
Hedycarya arborea	√	√	√
Hoheria sexstylosa	√		
Ileostylus micranthus (unc)	√		
Ixerba brexioides	√	√	√
Knightia excelsa	√		
Kunzea ericoides var. *linearis*	√ p†		
Kunzea aff. *ericoides* (b) (stout tree, bark peeling in long, leathery, tabular strips; branchlets with appressed, antrorse silky hairs; inflorescences	√ p/i		

mainly corymbiform)			
Leptospermum scoparium s.s (unc)	√ ?p		√
Leptospermum aff. *scoparium* (a) (common North Island variant, leaves wide, lanceolate, apex hardly pungent, lamina margins silky hairy)	√	√	√
Leucopogon fasciculatus	√	√	√
**Leycesteria formosa*			√
Litsea calicaris	√		
Lophomyrtus bullata (unc)	√	√	√
Melicytus lanceolatus (unc)	√	√	√
M. ramiflorus	√		√
Myrsine australis	√	√	√
M. salicina	√	√	√
Neomyrtus pedunculatus	√	√	√
Nestegis lanceolatus (unc)	√		√
Pittosporum cornifolium (unc)		√	
P. tenuifolium	√ p/i	√	√
P. tenuifolium var. *colensoi*	√		
Plagianthus regius var. *regius*	√ p		
Pseudopanax arboreus	√ p/i	√	√
P. crassifolius (unc)		√	√
Pseudowintera colorata (unc)			√
Raukaua anomalus (unc)		√	√
R. edgerleyi (unc)	√	√	√
**Salix cinerea*	√	√	√
Schefflera digitata	√		
Weinmannia racemosa	√		√
**Ulex europaeus* (unc)	√		

DICOT VINES & SCRAMBLING PLANTS (14) (I:10 A:4)

	Te Pu 1	**Te Pu 2**	**Te Pu 3**
Clematis paniculata (unc)			√
**Hedera helix* subsp. *helix* (unc)		√	
Muehlenbeckia australis	√	√	√
Parsonsia capsularis	√		
P. heterophylla	√	√	√
Metrosideros diffusa	√		√
M. fulgens	√	√	
M. perforata	√	√	
Rubus australis	√	√	√
R. cissoides	√	√	√

*R. *phoenicolasius* (unc)	√	√	
*R. *procerus* (unc)	√		
R. schmidelioides var. *schmidelioides*	√		
*R. *ulmifolius*	√	√	√

GRASSES (15) (I:7 A:8)

	Te Pu 1	**Te Pu 2**	**Te Pu 3**
**Agrostis capillaris*	√	√	√
**Anthoxanthum odoratum*	√		
Cortaderia fulvida	√	√	√
C. toetoe (unc)		√	
**Dactylis glomerata*	√	√	
**Eragrostis brownii* (unc)			√
Hierochloe redolens (unc)	√	√	√
**Holcus lanatus*	√	√	√
Microlaena avenacea	√		√
M. stipoides	√		√
**Poa annua*			√
**Phleum pratense* (unc)		√	
Rytidosperma gracile	√	√	
*R. *racemosum*	√		
R. unarede	√	√	√

ORCHIDS (6) (I:7 A:0)

	Te Pu 1	**Te Pu 2**	**Te Pu3**
Drymoanthus adversus (unc)	√		√
Earina autumnalis (unc)	√	√	
E. mucronata (unc)	√	√	√
Ichthystomum pygmaeum (unc)	√		
Petalochilus sp.		√	
Thelymitra cyanea		√	
Winika cunninghamii	√		

RUSHES (7) (I:3 A:4)

	Te Pu 1	**Te Pu 2**	**Te Pu 3**
**Juncus acuminatus*	√	√	
**J. acutiflorus*	√		
**J. articulatus*	√	√	
**J. bulbosus*	√	√	√
J. distegus (unc)	√		
J. edgariae	√		√

J. effusus	√	√	√

SEDGES (27) (I:24 A:3)

	Te Pu 1	Te Pu 2	Te Pu 3
Baumea arthrophylla	√	√	√
B. rubiginosa	√	√	√
B. tenax	√	√	√
B. teretifolia		√	√
**C. demissa*	√	√	√
C. dipsacea	√	√	√
C. dissita	√	√	√
C. lessoniana (unc)	√		
C. maorica (unc)	√	√	√
**C. ovalis* (unc)			√
**C. scoparia* (unc)		√	
C. secta	√	√	√
C. solandri	√	√	
C. virgata	√	√	√
Eleocharis acuta	√	√	√
E. gracilis	√	√	√
E. pusilla (unc)			√
E. sphacelata	√		
G. xanthocarpa		√	√
Isolepis distigmatosa (unc)		√	
I. inundatus	√	√	√
I. prolifera (unc)			√
I. reticularis	√	√	√
Schoenus apogon (unc)			√
S. maschalinus	√	√	√
Uncinia distans	√	√	√
U. uncinata	√	√	√

MONOCOT HERBS (OTHER THAN GRASSES, ORCHIDS, RUSHES & SEDGES) (10) (I:10 A:0)

	Te Pu 1	Te Pu 2	Te Pu 3
Astelia fragrans			√
A. grandis			√
A. solandri	√		
Collospermum hastatum		√	√
C. microspermum	√	√	√
Dianella nigra s.s.	√	√	√
Phormium cookianum subsp. *hookeri*	√ p		

Phormium tenax	√ p/i
P. cookianum x *P. tenax*	√ p
Potamogeton cheesemanii	√

DICOT COMPOSITE HERBS (14) (I:2 A:12)

	Te Pu 1	Te Pu 2	Te Pu 3
**Achillea millefolium*	√	√	√
**Bidens frondosa* (unc)	√		√
**Conyza albida*		√	
Euchiton limosus (unc)	√	√	√
**Erechtites hieraciifolia* (unc)			√
**Cirsium arvense* (unc)			√
**C. vulgare*	√		√
**Crepis capillaris*	√		√
**Hypochoeris radicata*	√	√	√
**Leontodon taraxacoides*	√		√
**Leucanthemum vulgare*	√	√	√
**Mycelis muralis*	√		√
**Senecio jacobaea*	√		√
S. minimus (unc)		√	√
**Taraxacum officinale* agg.		√	

DICOT NON-COMPOSITE HERBS (41) (I:20 A:22)

	Te Pu 1	Te Pu 2	Te Pu 3
Acaena anserinifolia		√	
A. novae-zelandiae		√	
**Callitriche stagnalis*	√		
Centella uniflora	√		√
**Digitalis purpurea*	√		√
Drosera binata		√	
**Duchesnea indica*	√	√	√
**Galium aparine*			√
**G. palustre*	√	√	√
**Geranium robertianum*	√		
Glossostigma elatinoides			√
Gonocarpus micranthus subsp. *micranthus*		√	√
Haloragis erecta	√		
Hydrocotyle novae-zeelandiae s.s	√	√	√
H. pterocarpa	√	√	√
Lilaeopsis novae-zelandiae			√
**Lotus pedunculatus*	√	√	√
**Ludwigia palustris*	√	√	

**Lythrum portula* (unc)			√
**Mentha pulegium*	√		
**Myosotis laxa* subsp. *caespitosa*		√	
Myriophyllum pedunculatum subsp. *novae-zelandiae*			√
M. propinquum	√		√
Nertera scapanioides		√	
**Persicaria hydropiper*	√	√	
**Plantago australis*	√		√
**P. lanceolata*	√	√	
**Potentilla anglica* (unc)	√	√	√
Pratia angulata	√	√	√
Pratia angulata x *P. perpusilla* (unc)			√
**Prunella vulgaris*	√	√	
Ranunculus ?*amphitrichus* (no flowering material seen)		√	√
**R. flammula*	√	√	√
R. reflexus	√	√	
**R. repens*	√		
**Rumex acetosella*	√		√
**R. conglomerates*	√		
**R. obtusifolius*	√		
Solanum americanum subsp. *nutans* (unc)	√		
**S. nigrum*	√		
Viola lyallii (unc)			√

TOTAL TAXA: 248
Indigenous: 189
Adventive: 59